5

Abstract

A communication system has a plurality of ground stations for communicating communication signal to a plurality of satellites located in an inclined elliptical sub-geosynchronous orbit with respect to the earth. The plurality of satellites operate in a service area in a synchronized manner to provide continuous coverage to the service area. The satellites generate a plurality of beams with variable beamwidths to obtain a substantially uniform cell size covering the service area. A user terminal within the service area receives communication signals from the satellite.